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Kyle [US/US]; 306 Whitmore Road, Damascus, PA 18415 (US).

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(74) Agent: **JOHNSON, Jimmie**; Synnestvedt & Lechner LLP, 2600 Aramark Tower, 1101 Market Street, Philadelphia, PA 19107-2950 (US).

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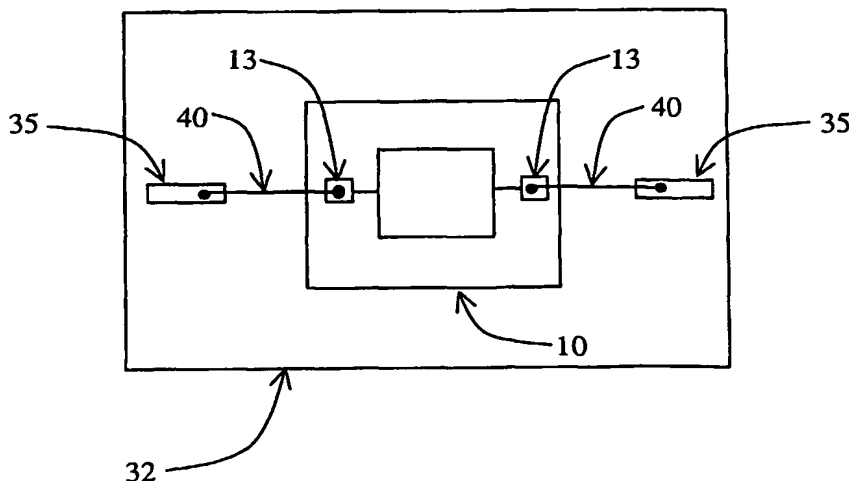
(71) Applicant (for all designated States except US):
KULICKE & SOFFA INVESTMENTS INC. [US/US];
2101 Blair Mill Road, Willow Grove, PA 19090 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **BEATSON, David, Thomas** [US/US]; 485 Greenwood Road, Kennett Square, PA 19348 (US). **CLAUBERG, Horst** [DE/US]; 135 Polo Drive, North Wales, PA 19454 (US). **DURY, Kenneth**,

[Continued on next page]

(54) Title: ELECTRICAL INTERCONNECT STRUCTURES FOR INTEGRATED CIRCUITS AND METHODS OF MANUFACTURING THE SAME



(57) Abstract: Disclosed are interconnect structures and methods which utilize a bonding surface comprising copper nitride. The interconnect structures include a bonding surface comprising copper nitride which is effective at preventing oxidation and/or other unwanted corrosion of the underlying conductive material while providing the basis for a high conductivity bond. The copper nitride bonding surface provides a relatively non-conductive, corrosion-resistant bonding surface while at the same time being readily transformed into a conductive layer at or just prior to the time of bonding.



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According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC 7 H01L		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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Y	4 January 2001 (2001-01-04) page 3, line 13 - page 6, line 27; claims 9, 19	6-9, 13-17, 20, 22, 23, 27-31, 34, 36, 37
E	& US 2004/087150 A1 (RAMM JURGEN) 6 May 2004 (2004-05-06) the whole document	1-3, 10-12, 24-26, 38
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<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex.		
* Special categories of cited documents : *A* document defining the general state of the art which is not considered to be of particular relevance *E* earlier document but published on or after the international filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. *&* document member of the same patent family		
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Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 851 epo nl, Fax (+31-70) 340-3016		Authorized officer Edmeades, M

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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